Recombinant Mouse SMOC-2
Catalog Number: 6075-SM

DESCRIPTION
Source
Mouse myeloma cell line, NS0-derived
Leu30-Gly447, with a C-terminal 6-His tag
Accession # AAH19527

N-terminal Sequence Analysis
Leu30

Predicted Molecular Mass
47.6 kDa

SPECIFICATIONS
SDS-PAGE
58-61 kDa, reducing conditions

Activity
Measured by the ability of the immobilized protein to support the adhesion of A431 human epithelial carcinoma cells.
When 5 x 10⁴ cells/well are added to rSMOC-2 coated plates, cell adhesion is enhanced in a dose dependent manner after 75 minutes at 37 °C. The ED₅₀ for this effect is typically 0.2-0.8 μg/mL.

Endotoxin Level
<0.01 EU per 1 μg of the protein by the LAL method.

Purity
>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation
Lyophilized from a 0.2 μm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE
Reconstitution
Reconstitute at 200 μg/mL in PBS.

Shipping
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage
Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND
SMOC-2 (secreted, or SPARC-related, modular calcium-binding protein 2), previously called SMAP2 (smooth muscle-associated protein 2), is a 55 kDa glycoprotein that is a member of the SPARC family of matricellular proteins (1, 2). The mouse SMOC-2 cDNA encodes 447 amino acids (aa), including a 21 aa signal sequence, a Kazal-like domain (aa 40 - 84), two thyroglobulin type-1 segments (aa 87 - 153 and 213 - 281) and two EF-hand sequences (aa 347 - 382 and 384 - 419). Of three splice variants, one shows a 13 aa substitution for aa 443 - 447, another shows an 11 aa insertion after Ala170, and a third contains both of these variations. Mature mouse SMOC-2 shares 99%, 95% and 93% aa identity with rat, human and canine SMOC-2, respectively. SMOC-2 is widely expressed in the extracellular matrix and appears to have adhesion-related functions (1 - 5). Recombinant bacterially produced human SMOC-1 and SMOC-2 can bind the acute phase protein, C-reactive protein, and the adhesion proteins, fibulin and vitronectin, while keratinocyte SMOC-2 binds integrins αvβ1 and αvβ6 (3, 6). SMOC-2 promotes cell cycle progression by signaling through the integrin-linked kinase (ILK) to upregulate cyclin-D1 (4). When expressed in the endothelial extracellular matrix, it potentiates growth factor-induced angiogenesis (5). SMOC-2 expression is upregulated during neointima formation, promoting proliferation and migration of vascular smooth muscle (2). In the skin, it promotes keratinocyte attachment and migration (6). Since Kazal and thyroglobulin domains are often found in protease inhibitors, SMOC-2 is also proposed to inhibit proteases in the lung and artery (2, 7).

References: